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27538 7590 10/03/2007 KAPLAN GILMAN GIBSON & DERNIER L.L.P. 900 ROUTE 9 NORTH WOODBIDGE, NJ 07095				
			EXAMINER TRAN, KHUONG N	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/785,216

Applicant(s)

KARANASSOS, JAMES

Examiner

Khuong Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20 May 2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - The word 'is' in paragraph 0009, line 4 should be replaced with --are--.
 - The word 'employ' in paragraph 0010, line 5 should be replaced with --employs--.
 - The word 'lesson' in paragraph 0047, line 15 should be replaced with --lessen--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6, 11-17, 19-26, 31-37, and 39-44 are rejected under 35 U.S.C. 102(e) as being anticipated by Saha (US Publication No.: 2005/0105508).

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Regarding claim 1, Saha teaches a communication network supporting VoIP (Voice over IP) technology that mainly consists a sub-manager and multiple management clients **[Figure 1]**. Figure 2 discloses an exemplary embodiment of a client management device **36**, or a CPE, for Internet telephony system operated by an Internet telephony service provider **[paragraph 0048]**. Among other components, the CPE consists of an Internet telephony object **56** that operates as a public switched telephone network (PSTN) gateway for the plurality of PSTN devices **70 [paragraph 0056]**. Thus a CPE client management device **36** can act as an administrative entity for a particular Internet telephony device from the client side. From **Figure 1**, to obtain management information base **34** values from each of the clients **18a-18c**, the sub-manager **20** maintains a TCP/IP connection **45** with each client **18a-18c** through the firewall **16a, 16b** serving the client. SNMP formatted messages are exchanged with each client **18a-18c** over the TCP/IP connection **45**. When variable values **44** identified by a client object identifier **188** from the management information base **34** are received from a client **18a-18c**, the sub-manager **20** redefines each variable value **44** with a master object identifier **182** from the master management information base **32** and provides such master management information base **32** values to the NMS **22** using SNMP messages over traditional UDP/IP channels **[paragraph 0046]**.

Furthermore, Saha illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table

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28, each of: i) a device state machine identifier **49** such as the memory address of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28** of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

To verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated [paragraph 0020, lines 1-8].

Regarding claim 2, Saha discloses in the teaching that the sub-manager **20** operates as a SNMP agent to the network management system (NMS) **22**. The sub-manager connects to the clients to obtain information such as client object identifier (COID) **188** and variable value **44** [paragraphs 0045-0046]. It also disclosed that each SNMP compliant agent implements relevant sections of a management information base (MIB) that includes variables required for monitoring, configuring, and controlling the client device [paragraph 0006, lines 1-4]. The teaching does not specifically define the variable values **44** as uptime values but since the sub-manager needs a mean to define the duration of the connections to be recorded in the active connection table **29**, it is inherent that any arbitrary value such as an uptime value can be set for the variable value **44**.

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Regarding claims 3 and 4, Saha discloses that after the TCP/IP connection is made between the sub-manager and a client, a heart beat message with a unique identifier such as a number derived from the MAC address of the client 18 **[paragraph 0062, lines 1-7]**. In the event that the heart beat timer exceeds the duration of time specified in the previous heart beat message 113 (or a multiple of the duration of time specified in the previous heart beat message 113) during which a subsequent heart beat message 113 was not received as determined at step 123, it can be assumed that the TCP/IP connection 45 no longer exists **[paragraph 0090]**. Therefore based from the uptime value from claim 2, it is concluded that a determination for a particular connection from the active connection table 29 is inactive when the uptime value exceeds the threshold level.

Regarding claim 5, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Regarding claim 6, Saha teaches a predetermined time out period can be set as a threshold level in case the connection goes inactive **[paragraph 0020, lines 1-7]**. Additionally, from claims 4 and 5 the threshold level is dependent on the previous heart beat message. Therefore official notice is taken that a predetermined time for the threshold as disclosed may be set to 180 minutes.

Regarding claim 11, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 12, Saha teaches in **Figure 1**, the sub-manager **20** actively connects to each CPE client management device **36**, or an administrative entity for a particular client, to exchange information from its master information base MIB **34**. Information can be client object identifier (COID) **188** and variable value **44**, which can be set as uptime value (from claim 2). Once an IP connection is establish between the sub-manager and the client, the client network management request messages are sent to identify clients using variables within the MIB [paragraph 00018, lines 1-3].

Referring to the chart in **Figure 3**, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 13, Saha teaches in order to verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically

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exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated **[paragraph 0020]**.

Regarding claim 14, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Regarding claim 15, Saha teaches that the threshold level is defined by the duration of the heart beat message sent from the sub-manager to the client. It is further noted that the sub-manager frequently sends a data frame through the TCP/IP connection to verify if the connection with the client is still active **[paragraph 0020, lines 1-8]**. Since the sub-manager is capable of sending such data frame on a regular basis in addition to the heart beat message to the client, it is inherent that the threshold level of a heart beat message is affected by the processing load carried out by the sub-manager when a data frame is transmitted in conjunction with heart beat messages.

Regarding claim 16, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module, or the receiver. The SNMP

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agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Furthermore, Saha illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table **28**, each of: i) a device state machine identifier **49** such as the memory address of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28** of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

Regarding claim 17, Saha discloses in the teaching that the sub-manager **20** operates as a SNMP agent to the network management system (NMS) **22**. The sub-manager connects to the clients to obtain information such as client object identifier (COID) **188** and variable value **44** [paragraphs 0045-0046]. It also disclosed that each SNMP compliant agent implements relevant sections of a management information base (MIB) that includes variables required for monitoring, configuring, and controlling the client device [paragraph 0006, lines 1-4]. The teaching does not specifically define the variable values **44** as uptime values but since the sub-manager needs a mean to define the duration of the connections to be recorded in the active connection table **29**, it is inherent that any arbitrary value such as an uptime value can be set for the variable value **44**.

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Saha also discloses that after the TCP/IP connection is made between the sub-manager and a client, a heart beat message with a unique identifier such as a number derived from the MAC address of the client 18 [paragraph 0062, lines 1-7]. In the event that the heart beat timer exceeds the duration of time specified in the previous heart beat message 113 (or a multiple of the duration of time specified in the previous heart beat message 113) during which a subsequent heart beat message 113 was not received as determined at step 123, it can be assumed that the TCP/IP connection 45 no longer exists [paragraph 0090]. Therefore based from the uptime value from claim 2, it is concluded that a determination for a particular connection from the active connection table 29 is inactive when the uptime value exceeds the threshold level.

Regarding claim 19, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager 78. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager 20. Therefore the sub-manager includes an active connection table 28 that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 20, Saha teaches that the administrative entity, such as the client management device 36 in **Figure 1**, connects to the sub-manager 20 to exchange information relating to VoIP calls. When a device (such as client 18a) on a private network (such as private network 14a) opens a TCP/IP connection with a globally addressable device coupled to the Internet 12 (such as the sub-

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manager 20), the client 18a sends a TCP/IP connection request on the private network 14a. The TCP/IP connection request is routed to the NAT firewall 16a where it undergoes both IP address and port translation before being routed to the sub-manager 20 on the Internet 12 **[paragraph 0041]**.

Additionally, **Figure 3** states that after the TCP/IP connection 45 is established with the sub-manager 20, the connections module 78 identifies the CPE client 18 to the sub-manager 20 at step 92. Step 92 includes sending an SNMP Inform message (which also functions as the first heart beat message 113) with a unique identifier such as a number derived from the MAC address of the client 18. Following step 92, the connection manager 78 operates as an event driven state machine sustaining an event loop at box 93 with four exemplary events triggering the connections module 78 to perform corresponding actions **[paragraph 0062]**.

Furthermore, to verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated **[paragraph 0020, lines 1-8]**. Therefore it is inherent that the administrative entity in the client management device 36 is capable of terminating the IP connection with the sub-manager by sending a command to disconnect the CPE from the sub-manager.

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Regarding claim 21, Saha teaches a communication network supporting VoIP (Voice over IP) technology that mainly consists a sub-manager and multiple management clients **[Figure 1]**. Figure 2 discloses an exemplary embodiment of a client management device **36**, or a CPE, for Internet telephony system operated by an Internet telephony service provider **[paragraph 0048]**. Among other components, the CPE consists of an Internet telephony object **56** that operates as a public switched telephone network (PSTN) gateway for the plurality of PSTN devices **70** **[paragraph 0056]**. Thus a CPE client management device **36** can act as an administrative entity for a particular Internet telephony device from the client side. From **Figure 1**, to obtain management information base **34** values from each of the clients **18a-18c**, the sub-manager **20**, the receiver, maintains a TCP/IP connection **45** with each client **18a-18c** through the firewall **16a, 16b** serving the client. SNMP formatted messages are exchanged with each client **18a-18c** over the TCP/IP connection **45**. When variable values **44** identified by a client object identifier **188** from the management information base **34** are received from a client **18a-18c**, the sub-manager **20** redefines each variable value **44** with a master object identifier **182** from the master management information base **32** and provides such master management information base **32** values to the NMS **22** using SNMP messages over traditional UDP/IP channels **[paragraph 0046]**.

Furthermore, Saha illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table

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28, each of: i) a device state machine identifier **49** such as the memory address of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28**, or the analyzer, of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

To verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated **[paragraph 0020, lines 1-8]**.

Regarding claim 22, Saha discloses in the teaching that the sub-manager **20** operates as a SNMP agent to the network management system (NMS) **22**. The sub-manager connects to the clients to obtain information such as client object identifier (COID) **188** and variable value **44** **[paragraphs 0045-0046]**. It also disclosed that each SNMP compliant agent implements relevant sections of a management information base (MIB) that includes variables required for monitoring, configuring, and controlling the client device **[paragraph 0006, lines 1-4]**. The teaching does not specifically define the variable values **44** as uptime values but since the sub-manager needs a mean to define the duration of the connections to be recorded in the active connection table **29**, it is inherent that any arbitrary value such as an uptime value can be set for the variable value **44**.

Regarding claims 23 and 24, Saha discloses that after the TCP/IP connection is made between the sub-manager and a client, a heart beat message with a unique identifier such as a number derived from the MAC address of the client 18 **[paragraph 0062, lines 1-7]**. In the event that the heart beat timer exceeds the duration of time specified in the previous heart beat message 113 (or a multiple of the duration of time specified in the previous heart beat message 113) during which a subsequent heart beat message 113 was not received as determined at step 123, it can be assumed that the TCP/IP connection 45 no longer exists **[paragraph 0090]**. Therefore based from the uptime value from claim 2, it is concluded that a determination for a particular connection from the active connection table 29 is inactive when the uptime value exceeds the threshold level.

Regarding claim 25, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Regarding claim 26, Saha teaches a predetermined time out period can be set as a threshold level in case the connection goes inactive **[paragraph 0020, lines 1-7]**. Additionally, from claims 4 and 5 the threshold level is dependent on the previous heart beat message. Therefore official notice is taken that a predetermined time for the threshold as disclosed may be set to 180 minutes.

Regarding claim 31, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 32, Saha teaches in **Figure 1**, the sub-manager **20** actively connects to each CPE client management device **36**, or an administrative entity for a particular client, to exchange information from its master information base MIB **34**. Information can be client object identifier (COID) **188** and variable value **44**, which can be set as uptime value (from claim 2). Once an IP connection is establish between the sub-manager and the client, the client network management request messages are sent to identify clients using variables within the MIB [paragraph 00018, lines 1-3].

Referring to the chart in **Figure 3**, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 33, Saha teaches in order to verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically

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exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated **[paragraph 0020]**.

Regarding claim 34, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Regarding claim 35, Saha teaches that the threshold level is defined by the duration of the heart beat message sent from the sub-manager to the client. It is further noted that the sub-manager frequently sends a data frame through the TCP/IP connection to verify if the connection with the client is still active **[paragraph 0020, lines 1-8]**. Since the sub-manager is capable of sending such data frame on a regular basis in addition to the heart beat message to the client, it is inherent that the threshold level of a heart beat message is affected by the processing load carried out by the sub-manager when a data frame is transmitted in conjunction with heart beat messages.

Regarding claim 36, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module, or the receiver. The SNMP

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agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Furthermore, Saha illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table **28**, each of: i) a device state machine identifier **49** such as the memory address of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28** of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

Regarding claim 37, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module, or the receiver. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Furthermore, Saha illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table **28**, each of: i) a device state machine identifier **49** such as the memory address

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of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28** of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

Regarding claim 39, Saha discloses in **Figure 3** a flow chart outlining the exemplary operation of the connection manager **78**. Referring to the chart, in conjunction with **Figure 1**, step 94 represents sending a request or a command from the sub-manager to the SNMP agent module. The SNMP agent module works in conjunction with the sub-manager **20**. Therefore the sub-manager includes an active connection table **28** that keeps track of all the TCP/IP call sessions within the communication network.

Regarding claim 40, Saha teaches that the administrative entity, such as the client management device **36** in **Figure 1**, connects to the sub-manager **20** to exchange information relating to VoIP calls. When a device (such as client **18a**) on a private network (such as private network **14a**) opens a TCP/IP connection with a globally addressable device coupled to the Internet **12** (such as the sub-manager **20**), the client **18a** sends a TCP/IP connection request on the private network **14a**. The TCP/IP connection request is routed to the NAT firewall **16a** where it undergoes both IP address and port translation before being routed to the sub-manager **20** on the Internet **12** [paragraph 0041].

Additionally, **Figure 3** states that after the TCP/IP connection **45** is established with the sub-manager **20**, the connections module **78** identifies the

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CPE client **18** to the sub-manager **20** at step 92. Step 92 includes sending an SNMP Inform message (which also functions as the first heart beat message 113) with a unique identifier such as a number derived from the MAC address of the client 18. Following step 92, the connection manager **78** operates as an event driven state machine sustaining an event loop at box 93 with four exemplary events triggering the connections module **78** to perform corresponding actions **[paragraph 0062]**.

Saha also illustrates an exemplary operation of a connection module in accordance with an embodiment in a flow chart of **Figure 4a**. Step 120 represents associating with the client identifier **46**, in the active connections table **28**, each of: i) a device state machine identifier **49** such as the memory address of the state machine **47**; ii) a client connection identifier **48**; and iii) an identifier **51** indicating whether the TCP/IP connection **45** with the device is active or inactive. Hence the active connection table **28** of sub-manager **20** keeps a record and analyzes the information obtained from clients to determine if they are inactive.

Furthermore, to verify that the TCP/IP connection is open through the firewall, the sub-manager may periodically exchange a TCP/IP frame with the client over the connection. The sub-manager may determine that an open connection does not exist with the client if either: i) the periodic TCP/IP frame has not been received from the client for a predetermined time out period; or ii) the TCP/IP connection has been terminated **[paragraph 0020, lines 1-8]**. Therefore it is inherent that the administrative entity in the client management device **36** is

capable of terminating the IP connection with the sub-manager by sending a command to disconnect the CPE from the sub-manager.

Claim 41 is rejected for similar subject matter as claim 40.

Regarding claims 42 and 43, Saha teaches of a session controller **28** of the sub-manager **20** in **Figure 1** that is operatively coupled between one or more packet switched networks **12** and one or more public switched telephone network **70** [**Figure 2**]. From **Figure 1**, it is inherent that the session controller **28** has the capability of a receiver since information such as the COID **188** and the variable values **44** from the administrative entity **36** is being sent for storing to the table. Therefore, the session controller **28**, as a receiver, can receive information sent from the administrative entity with regards to information and command or request to terminate call sessions recorded in the table.

Since the session controller **28** is coupled to the client management devices through a TCP/IP connection for exchanging information, it is disclosed that the information such as a client request message is being sent to the administrative entity via the request state machine **39**. Hence the request state machine **29** is capable of transmitting information to the administrative entity as taught by Saha [**paragraph 0015**].

Claim 44 is rejected for similar subject matter as claims 42 and 43.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-10, 18, 27-30, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saha (US Publication No. 2005/0105508) in view of Tezuka et al (US Publication No. 2003/0107991).

Regarding claim 7, Saha discloses in the teaching that the sub-manager **20** operates as a SNMP agent to the network management system (NMS) **22**. The sub-manager connects to the clients to obtain information such as client object identifier (COID) **188** and variable value **44** [paragraphs 0045-0046]. Saha, however, fails to teach the information obtained from the administrative entity includes at least one of numbers of data packets transmitted and received during VoIP calls. Tezuka et al disclose in the teaching a technique for transferring audio (sound or voice) data by using VoIP network. The system has a call agent (CA) to execute call control outgoing and incoming calls with the PSTN. For an IP telephone call based on H.323, the CA designates the IP address of the VoIP-GW of a destination, UDP-Port, codec format (e.g., G. 711, G. 723, G729), and the like. On the other hand, the CA controls the VoIP-GW by using, e.g., Megaco (Media Gateway Control). The relay router executes a relaying (forwarding) operation of an audio packet transmitted and received by the VoIP-GW and an edge router and an IP packet of other data [paragraph **0004**, lines 16-30]. As a result, the relay obtains information regarding to the number of packets transmitted and received during VoIP calls from the call agent based on the packet flow. Therefore, it would have been obvious to one with

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ordinary skill in the art at the time of the invention to modify the teaching of Saha to include such information concerning packet flows as taught by Tezuka et al. One is motivated as such to monitor the packet flow which passes through a relay router in a VoIP network and in which a packet is transferred with a predetermined priority, and for, when congestion is generated by generation of a new packet flow, maintaining a transfer state of a packet of a packet flow established before the new packet flow is generated and transferred with the predetermined priority **[paragraph 0012]**.

Regarding claims 8-9, Saha teaches the determination for inactivity regarding VoIP calls using the threshold level of the heart beat message time. Saha, however, fails to teach such determination can be made based on the number of data packets received and transmitted are unchanging over time and that a threshold level to conclude inactivity can be utilized based on packet flow. Tezuka et al disclose a technique to monitor audio data flow in a VoIP communication system to prevent data congestion based on a threshold level. According to the teaching, each relay router detects an audio packet transferred on each of the new audio packet flows and executes congestion determination per audio packet. The congestion determination is executed by checking whether a sum total of bands used by "high-priority (H)" packet flows exceeds a value (threshold value of the congestion determination) set in advance by each relay router **[paragraph 0063]**. As a result, when the call agent receives the congestion notice, a priority change sequence or a disconnection sequence is executed **[paragraph 0066, lines 1-3]**. Therefore, it would have been obvious to

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one with ordinary skill in the art at the time of the invention to modify the teaching of Saha to include the packet flow as a threshold level in the determination for inactivity of VoIP calls as taught by Tezuka et al. One is motivated as such to avoid the extent of network congestion from affecting high-priority data packet flow relating to telephonic communications **[paragraph 0069, lines 7-11]**.

Regarding claim 10, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Claim 18 is rejected for similar matter to claims 7, 8, and 9.

Regarding claim 27, Saha discloses in the teaching that the sub-manager **20** operates as a SNMP agent to the network management system (NMS) **22**. The sub-manager connects to the clients to obtain information such as client object identifier (COID) **188** and variable value **44** **[paragraphs 0045-0046]**. Saha, however, fails to teach the information obtained from the administrative entity includes at least one of numbers of data packets transmitted and received during VoIP calls. Tezuka et al disclose in the teaching a technique for transferring audio (sound or voice) data by using VoIP network. The system has a call agent (CA) to execute call control outgoing and incoming calls with the PSTN. For an IP telephone call based on H.323, the CA designates the IP address of the VoIP-GW of a destination, UDP-Port, codec format (e.g., G. 711, G. 723, G729), and the like. On the other hand, the CA controls the VoIP-GW by

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using, e.g., Megaco (Media Gateway Control). The relay router executes a relaying (forwarding) operation of an audio packet transmitted and received by the VoIP-GW and an edge router and an IP packet of other data [paragraph 0004, lines 16-30]. As a result, the relay obtains information regarding to the number of packets transmitted and received during VoIP calls from the call agent based on the packet flow. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify the teaching of Saha to include such information concerning packet flows as taught by Tezuka et al. One is motivated as such to monitor the packet flow which passes through a relay router in a VoIP network and in which a packet is transferred with a predetermined priority, and for, when congestion is generated by generation of a new packet flow, maintaining a transfer state of a packet of a packet flow established before the new packet flow is generated and transferred with the predetermined priority [paragraph 0012].

Regarding claims 28-29, Saha teaches the determination for inactivity regarding VoIP calls using the threshold level of the heart beat message time. Saha, however, fails to teach such determination can be made based on the number of data packets received and transmitted are unchanging over time and that a threshold level to conclude inactivity can be utilized based on packet flow. Tezuka et al disclose a technique to monitor audio data flow in a VoIP communication system to prevent data congestion based on a threshold level. According to the teaching, each relay router detects an audio packet transferred on each of the new audio packet flows and executes congestion determination

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per audio packet. The congestion determination is executed by checking whether a sum total of bands used by "high-priority (H)" packet flows exceeds a value (threshold value of the congestion determination) set in advance by each relay router **[paragraph 0063]**. As a result, when the call agent receives the congestion notice, a priority change sequence or a disconnection sequence is executed **[paragraph 0066, lines 1-3]**. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to modify the teaching of Saha to include the packet flow as a threshold level in the determination for inactivity of VoIP calls as taught by Tezuka et al. One is motivated as such to avoid the extent of network congestion from affecting high-priority data packet flow relating to telephonic communications **[paragraph 0069, lines 7-11]**.

Regarding claim 30, Saha teaches the threshold level of the heart beat message to determine inactivity comes from the previous heart beat message. Therefore the threshold level is variable since heart beat messages have different lengths. Thus it is concluded that a threshold value can be dependent on the previous heart beat message value **[paragraph 0090, lines 1-3]**.

Claim 38 is rejected for similar subject matter to claims 27, 28, and 29.

Conclusion

6. Any response to this Office Action should be **faxed** to (571) 273-8300 or **mailed** to:

Commissioner for Patents,

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P.O. Box 1450
Alexandria, VA 22313-1450

Hand-Delivered responses should be brought to
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khuong Tran, whose telephone number is (571) 270-3522. The examiner can normally be reached Mon-Fri from 7:30AM - 5:00PM.
8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Q. Tieu, can be reached at (571) 272-7490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.
9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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September 30, 2007

A handwritten signature in cursive script, reading "Benny Q. Tieu".

BENNY Q. TIEU
SPE/TRAINER